

That which is claimed:

1. A method for making an absorbent composite from a continuous tow comprising the steps of:

spreading a crimped tow;

de-registering the crimped tow by using at least two pairs of rollers, each pair of rollers having a metal-faced roller and a rubber-faced roller and the metal-faced rollers being oppositely disposed between the pairs of rollers;

shaping the de-registered tow; and

distributing a particulate onto the shaped tow.

2. The method of Claim 1 wherein said metal faced rollers being smooth, grooved, threaded, textured, or combinations thereof.

3. The method of Claim 1 wherein said rubber faced roller being smooth.

4. The method of Claim 1 wherein said pair of rollers being vertically aligned, one over the other.

5. The method of Claim 1 wherein one said pair or rollers rotates faster than the other pair of rollers.

6. The method of Claim 5 wherein the ratio of the faster roller pair to the other roller pair being in the range of 1 to 2.

7. The method of Claim 6 wherein the ratio of the faster roller pair to the other roller pair being 1.1 to 1.7.

8. The method of Claim 1 further comprising shaping the de-registered tow to a substantially rectangular cross-section.

9. The method of Claim 1 further comprising applying a liquid to the tow.

10. An apparatus for making an absorbent composite from a continuous tow comprising the steps of:

means for spreading a crimped tow;

means for de-registering the crimped tow by using at least two pairs of rollers, each pair of rollers having a metal faced roller and a rubber faced roller and the metal faced rollers being oppositely disposed between the pairs of rollers;

means for shaping the de-registered tow; and

means for distributing a particulate onto the shaped tow.

11. The apparatus of Claim 10 wherein said metal faced rollers being smooth, grooved, threaded, textured, or combinations thereof.

12. The apparatus of Claim 10 wherein said rubber faced roller being smooth.

13. The apparatus of Claim 10 wherein said pair of rollers being vertically aligned, one over the other.

14. The apparatus of Claim 10 wherein one said pair or rollers rotates faster than the other pair of rollers.

15. The apparatus of Claim 14 wherein the ratio of the faster roller pair to the other roller pair being in the range of 1 to 2.

16. The apparatus of Claim 15 wherein the ratio of the faster roller pair to the other roller pair being 1.1 to 1.7.

17. The apparatus of Claim 10 further comprising means for shaping the de-registered tow to a substantially rectangular cross-section.

18. The apparatus of Claim 10 further comprising means for applying a liquid to the tow.

19. A method for making an absorbent composite from a continuous tow comprising the steps of:

spreading a crimped tow;

de-registering the crimped tow by using at least two pairs of rollers, each pair of rollers having a metal-faced roller and a rubber-faced roller and the metal-faced rollers being disposed between the pairs of rollers on the same side of said pairs of rollers;

shaping the de-registered tow; and

distributing a particulate onto the shaped tow.

20. The method of Claim 19 wherein said metal faced rollers being smooth, grooved, threaded, textured, or combinations thereof.

21. The method of Claim 19 wherein said rubber faced roller being smooth.

22. The method of Claim 19 wherein said pair of rollers being vertically aligned, one over the other.

23. The method of Claim 19 wherein one said pair of rollers rotates faster than the other pair of rollers.

24. The method of Claim 23 wherein the ratio of the faster roller pair to the other roller pair being in the range of 1 to 2.

25. The method of Claim 24 wherein the ratio of the faster roller pair to the other roller pair being 1.1 to 1.7.

26. The method of Claim 19 further comprising shaping the de-registered tow to a substantially rectangular cross-section.

27. The method of Claim 19 further comprising applying a liquid to the tow.

28. An apparatus for making an absorbent composite from a continuous tow comprising the steps of:

means for spreading a crimped tow;

means for de-registering the crimped tow by using at least two pairs of rollers, each pair of rollers having a metal faced roller and a rubber faced roller and the metal-faced rollers being disposed between the pairs of rollers on the same side of said pairs of rollers;

means for shaping the de-registered tow; and

means for distributing a particulate onto the shaped tow.

29. The apparatus of Claim 28 wherein said metal faced rollers being smooth, grooved, threaded, textured, or combinations thereof.

30. The apparatus of Claim 28 wherein said rubber faced roller being smooth.

31. The apparatus of Claim 28 wherein said pair of rollers being vertically aligned, one over the other.

32. The apparatus of Claim 28 wherein one said pair or rollers rotates faster than the other pair of rollers.

33. The apparatus of Claim 32 wherein the ratio of the faster roller pair to the other roller pair being in the range of 1 to 2.

33. The apparatus of Claim 33 wherein the ratio of the faster roller pair to the other roller pair being 1.1 to 1.7.

34. The apparatus of Claim 28 further comprising means for shaping the de-registered tow to a substantially rectangular cross-section.

35. The apparatus of Claim 28 further comprising means for applying a liquid to the tow.